

expresses a 14H gene that complements a wild-type 14H gene mutation, and

3. Involving the direct or the test compound in the prolyl 4-hydroxylase activity or the progeny of the test nematode, 14H-gene in killed nematode or the wild-type nematode, wherein a 30% embryonic lethal phenotype indicates prolyl 4-hydroxylase inhibition.

4. The method of claim 1, wherein the test compound is a chemical.

5. (Amended) The method of claim 1, wherein the test compound is a protein or peptide.

6. The method of claim 1, wherein the introduction of the test compound involves placing the nematode in a solution containing the test compound.

7. The method of claim 1, wherein the test compound is introduced into a wild-type nematode and the observation of 30% embryonic lethal phenotype indicates nematode prolyl 4-hydroxylase inhibition.

8. The method of claim 1, wherein the test compound is introduced into a 14H-gene in killed nematode

and the observation of a dpy or embryonic lethal phenotype indicates P4H inhibition.

7. The method of claim 1, wherein the introduction of a test compound is into a test chimeric nematode and the observation of a dpy or embryonic lethal phenotype indicates non-native prolyl 4-hydroxylase inhibition.

8. (Amended) The method of claim 1, wherein the test chimeric nematode is a *C. elegans* and harbors a dpy-18 mutation.

9. The method of claim 1, wherein the observation of a dpy phenotype indicates that the test compound modulates the P4H gene found on chromosome III.

10. (Amended) A method for evaluating a test compound's ability to modulate prolyl 4-hydroxylase, comprising the step of:

a. introducing a test compound into a *Caenorhabditis elegans* comprising a dpy-18 or dpy-1 mutation phenotype, and

b. observing the effect of the test compound on the prolyl-4-hydroxylase activity of the prolyl gene of the *Caenorhabditis elegans*, wherein the rescue of the

F4H conc.
14. A p4y-1 phenotype indicates an increased level of p4y1-4-hydroxylase activity.

15. The method of claim 1 wherein the test compound is part of a combinatorial chemical library.

16. The method of claim 13 wherein the test compound is part of a combinatorial library.

F4H
17. (Amended) A method for evaluating a test compound's ability to modulate F4H, comprising the steps of:

(a) introducing a test compound into a test chimeric *Caenorhabditis elegans*, a F4H-gene modified *Caenorhabditis elegans*, or a wild-type *Caenorhabditis elegans*, wherein the test chimeric *Caenorhabditis elegans* has a complemented F4H gene mutation, and

(b) measuring the level of F4H activity of the progeny of the test *Caenorhabditis elegans*, F4H gene modified *Caenorhabditis elegans* or wild-type *Caenorhabditis elegans*, wherein a lower F4H activity compared to untested control *Caenorhabditis elegans* indicates that the test compound is an inhibitor of F4H.